IMPERIAL

DEPARTMENT OF AGRICULTURE

FOR THE WEST INDIES.

IMPERIAL BUREAU
14 FEB. 1928
OF MYCOLOGY

REPORT

ON THE

AGRICULTURAL DEPARTMENT, ST. LUCIA, 1926.

ISSUED BY THE IMPERIAL COMMISSIONER OF AGRICULTURE FOR THE WEST INDIES.

[Price Sixpence.]

PRINTED BY THE GOVERNMENT PRINTER AT THE GOVERNMENT PRINTING OFFICE, CASTRIES, ST. LUCIA.

1927.

FORWARDING DISEASED SPECIMENS FOR EXAMINATION.

PLANTS.

A few fragments of a diseased plant are of practically no value for scientific investigation.

Sufficient material should always be sent so that the primary cause of the trouble may be located.

Full particulars should be given as to the nature and extent of the damage done, the part of the plant attacked, the nature of the soil, drainage, the prevalence of disease, when it was first noticed, and whether any similar kind of disease has been previously observed in the neighbourhood.

Specimens of portions of plants attacked by fungi may be sent green packed in a well-ventilated box if the time taken for delivery is under 24 hours. but if delivery takes a longer time all leaves or soft fruits should be placed in a bottle or corked tube containing a solution made of 1 part of rum or methylated spirit and 2 parts of water. As many stages of the disease as possible should be sent, with notes as to the nature of each stage.

All specimens should be accompanied with detail particulars of the nature of the disease and should be addressed to :—

THE AGRICULTURAL SUPERINTENDENT,
BOTANIC GARDENS,
CASTRIES.

INSECTS.

Observations and specimens of economic importance or otherwise will always be gladly received.

The following directions should be observed in this respect :—

Living insects should be placed with a supply of the plant on which they are found feeding and the box should have small holes pierced for the purpose of ventilation. This should be carefully packed in such a way as to prevent their becoming crushed in transit.

If it is desired to preserve specimens they should be put in bottles with tightly fitting corks, methylated spirits, diluted rum, etc., making excellent preserving fluids.

Scale insects, etc., should be forwarded on the portion of the plant on which they are found.

If in doubt as to the best method of forwarding specimens, a letter should be sent asking for instructions and stating full details.

In all cases full particulars should be forwarded as to the nature and extent of damage done, along with any other important points that may have been noticed.

All specimens should be addressed :—

THE AGRICULTURAL SUPERINTENDENT,
BOTANIC GARDENS,
CASTRIES.

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LETTER OF TRANSMITTAL.

IMPERIAL DEPARTMENT OF AGRICULTURE
FOR THE WEST INDIES,
TRINIDAD,
7th June, 1927.

Commissioner of Agriculture to the Administrator, St. Lucia.

Sir,

I have the honour to transmit to you the report of the Agricultural Superintendent on the working of the St. Lucia Department of Agriculture for the year 1926.

2. The usual routine work of the Botanic Gardens, Castries, and the Experiment, Station, Reunion, appear to have been carried on satisfactorily, and experiments and investigation have received attention.

3. The increase of about 2,000 in the number of tree seedlings distributed is accounted for by the larger number of limes sent out during the year.

4. The suggestions of the Agricultural Superintendent that extended use should be made of Bay and Camphor for hedges and wind breaks would appear to be sound and deserving of careful consideration on the part of the planters. The reports from the Imperial Institute on Bay and Camphor are of interest in this connection.

5. The banana industry continued to develop during the year and successful shipments were made to New York.

6. The Agricultural Credit Societies are being wound up and some progress is reported in this matter.

7. The visit of the Agricultural Superintendent to the Imperial College of Tropical Agriculture is recorded. Such visits are likely to be of great value, and it is hoped that the Agricultural Officers from other colonies will be given opportunities for similar visits in the near future.

8. The reports covers the year 1926, but mention might here be made to three events in 1927 previous to the receipt of the report, (1) the appearance of Wither-tip of limes in St. Lucia (2) the cessation of work by the Banana Company which had by its activities stimulated the planting of bananas by estate owners and peasant proprietors, and (3) the disastrous fire which swept through Castries on the night of May 14, 1927. Each of these is a calamity, and taken together they affect all classes and sections of the whole community.

I have, etc.,

H. A. BALLOU,
Commissioner of Agriculture
Imperial College of
Tropical Agriculture.

STAFF OF THE AGRICULTURAL DEPARTMENT, ST. LUCIA.

E. A. Walters, F.R.H.S., F.R.Met. Soc. ..	Agricultural Superintendent and Land Officer.
R. W. Niles	Assistant Agricultural Superintendent.
E. L. Daniel	Foreman, Agricultural Experiment Station, Reunion.
W. W. Arno	Clerk to Agricultural Superintendent.
Llewellyn Agard*	Foreman, Botanic Gardens, Castries
Clement Wardrope	Foreman, Botanic Gardens, Castries
J. Sanchez* S. Joseph B. Williams	Banana Inspectors.

* Vacated.

CONTENTS.

WORK IN THE BOTANIC GARDENS, AND OBSERVATIONS ON PLANTS 1

AGRICULTURAL EXPERIMENT STATION, REUNION 2
Plant and Seed Importation, Seed and Plant Exchange, Work at the Experiment Station, Plant Distribution.

NOTES ON PLOTS AT THE EXPERIMENT STATION, REUNION 3
Sugar-cane seedlings, Bay trees, Coconuts, Dwarf Coconuts, Common Limes, Spineless Limes, Pineapples, Bananas, Coffee, Camphor ; Report of Imperial Institute on Camphor ; Citrus plots, Alfalfa, Bengal Bean, Cassava, Report of Imperial Institute on Cassava products.

FOREST CONSERVATION 9

CONTROL OF INSECT PESTS 9
Sugar-cane, Citrus, Coconuts, Bananas, Cotton.

CONTROL OF FUNGUS DISEASES 10
Sugar-cane, Cacao, Limes, Bananas.

PLANT QUARANTINE, DISEASES AND PESTS WITHIN THE COLONY 11

ANIMAL QUARANTINE 12

IDENTIFICATION AND ANALYSIS 12

PROGRESS IN THE CHIEF INDUSTRIES 12
Sugar, Rum, Cacao, Limes, Coconuts, Bananas.

PROGRESS IN MINOR INDUSTRIES 15
Bay Oil and Bay Rum, Cotton, Bee-Keeping, Oil Mills.

EXPORTS FROM ST. LUCIA 15

AGRICULTURAL INSTRUCTION 17
Primary Schools, Examination of Teachers, Lectures to Teachers, Agricultural Work in Country Districts, Visit of Agricultural Superintendent to Trinidad.

AGRICULTURAL CREDIT SOCIETIES 22

GOVERNMENT LIME JUICE FACTORY 24
Work of the Factory.

ADMINISTRATION 25
Reunion Estate and Land Settlement, Correspondence, Agricultural Headquarters, Expenditure and Receipts, Staff changes.

METEOROLOGICAL OBSERVATIONS 27
Appendix 1.
Appendix 2.

SAINT LUCIA.

Report of the Agricultural Department for the year ended December 31, 1926.

WORK IN THE BOTANIC GARDENS, AND OBSERVATIONS ON PLANTS.

The work conducted in the Botanic Gardens during the year has been seriously hampered by lack of funds, and as a result the Gardens have not always presented their usual attractive appearance.

The main projects carried out during the year included the planting of flowering shrubs, such as varieties of Hibiscus, alternately with clumps of *Bougainvillea, Stephanotis floribundab Br., Combretum laxum* Loefl and other climbers, including the admirable native climber, the Purple Wreath (*Petraea volubilis* Jacq). These plants should make good permanent features along the border formerly occupied by giant Pandanus. Hedges of *Pithecolobium unguis-cati* Benth. intermixed with *Lagerstroemia indica* var: *rosea* are gradually covering over the temporary wire fence, whilst the blue *Plumbago capensis* Thunb. forms a useful border shrub.

The new grass lawn bordering the main drive was completed and flower beds were formed, in addition to the planting of the dwarf *bambusa nana* to form hedges along the several drainage canals. Extensive pruning operations were carried out on many established decorative shrubs and palms. A large amount of transported soil consisting of a compost of leaf soil, loam and sand was worked into the various borders and beds which had become exhausted.

An experimental concrete dam, with sluice gate, was built across the main canal in order to prevent the entrance of sea-water at high tide, the gate being opened during low-tide and rainy weather to allow flushing of the canals, and thus accumulated salt is gradually being washed out of the soil with a consequent improvement in plant growth.

If the system is continued and good soil also introduced it will be possible to grow the more choice flowers and tender herbaceous plants, which is at present impossible owing to brackish water and the multitude of land crabs which breed in the salt mud. They devour all the softer parts of plants, and at high tides have completely devastated a lawn during two or three nights.

Crab destruction by a poison bait of phosphorus with breadfruit, has been continued and other poisons have been tried; these are, at the best, palliative measures, the true remedy lies in removing the breeding places; to this end the drainage system of the Gardens is being reorganised, superfluous drains are being filled in and covered by lawns.

The Lawn Tennis Court has been well patronised and a second hard Court is nearing completion. The funds aud arrangements for these Public Courts are in the hands of a Committee organised by His Honour the Acting Administrator.

Notable flowering plants during the year were *Spathodea speciosa* Br., and *G'iricidia maculata*, in addition to others mentioned in the report for 1925.

A commencement was made on the reorganisation of the nursery; the glass house which was in disrepair, was dismantled and re-erected on iron uprights sunk in concrete, the whole received two coats of white paint and now serves as a fernery and propagation house. Appreciation is due to the management of a local sugar factory for the gift of the iron work.

A large stock of plants both ornamental and economic was provided by the nursery for the Gardens and for sale during the year.

The headquarters of the Department was transferred to the Botanic Gardens in January and this change has proved of great convenience both in regard to conduct of work in the Gardens and business relations generally.

AGRICULTURAL EXPERIMENT STATION, REUNION.

The following plants and seeds have been introduced and are gratefully acknowledged :

Seeds of the Talipot Palm (*Corypha umbraculifera*), and budwood of Grapefruit and Oranges from Department of Agriculture, Trinidad ; seeds of *Hevea brasiliensis* from Hon. G. Palmer ; a selection of Australian timber plants from Mr. John Frew.

The following plants and seeds were received from the Imperial College of Tropical Agriculture, Trinidad :—

Sugar-cane, varieties Java unknown, Ba 11569, St. C. 12/4, B 156 ; Pineapple plants, varieties Chocona and Sugar loaf ; Banana plants, varieties Lacatan, Bumelan and Congo ; and various Green dressings, including Bengal bean. These plants were presented to the Department during the visit of the Agricultural Superintendent to the College in November.

A further collection of plants, which was bought and imported from the Department of Agriculture, Trinidad, during the visit, includes several new ornamental plants, improved varieties of coffee, pineapples, avocados and mangoes, green dressings and a new lawn grass, *Polytris praemorsa.*

Seeds and Plant Exchange—Foreign and Local.

Seeds were sent to the Imperial Department of Tropical Agriculture and plants and seeds to planters and to Public Institutions in the Colony.

WORK AT THE EXPERIMENT STATION.

Work at this Station is now mainly in connection with propagation of plants for sale, the trying out of economic plants such as sugar-cane, oil-palm, citrus and ground provisions, and as a quarantine station for introduced plants awaiting distribution.

Propagation work was further extended during the year and a record number of plants was grown and disposed of as shewn below :—

Plants, Seeds, Cuttings, etc., distributed during 1926.

	1926. (Number.)	1925. (Number.)
Plants—Economic—		
Lime (seedlings)	13,702	11,581
Citrus (budded)	102	257
Mango (grafted)	115	103
Pineapple (plants)	29	110
Dolichos (plants)	200	612
Melinis (clumps)	200	200
Elephant grass (clumps)	60	50
Various economics	364	64
Total	14,772	12,977
Vegetable seedlings (boxes)	3	...
Miscellaneous (number)	5	...
Eucalyptus (boxes)	3	..
Total	14,783	12,977
Cuttings—Economic—		
Uba cane plants (cuttings)	...	4,300
Camphor ...	...	100
Various (for wind-breaks)	500	550
Sweet Potato (cuttings)	3,000	...
Cassava (cuttings)	2,500	...
	6,000	4,950
Seeds—Economic—		
Horse beans ...	112 lb.	15 lb.
Sea Island Cotton Seed	36 „	...
Onion ...	1 „	5 „
Camphor (number)	...	50
Mango „	...	350
Vegetable seeds (packets)	57	87
Plants—Ornamental—		
Miscellaneous	278	223

NOTES ON PLOTS AT THE AGRICULTURAL EXPERIMENT STATION, REUNION.

Sugar-cane Seedlings.

The seedling canes grown at Reunion and tested last year (see Annual Report 1925) have been cultivated and are available for distribution as required; the best varieties have been established in the field containing the varieties of canes.

In addition to the St. Lucia varieties the following canes are in stock at the Station from which supplies are available to planters for working up a nursery.

BH 10 (12)	B 6388
BA 6032	St.C. 12/4
BA 11569	Uba cane
B 147	Java unknown
B 156	Bourbon
B 208	C 10
B 375	

A small supply of cane plants of variety C 10 was presented to the Station by the management of a local Sugar estate. This variety imported from India, is of the Uba type. It is a strong erect cane of very free stooling habit, and the trash is not persistent. The variety was planted at the Station under observation until found to be free from disease or pest, and it was then handed over to the factory for nursery work under observation.

Bay Trees.

Further interest has been evinced in this crop and a number of plants have been supplied for estates work following the recommendations made on leaf yields and oil content in the previous report. The crop was collected in April of the present year and is recorded against the crops for 1924 and 1925. Seedlings of the varieties are being raised for distribution.

The bay tree could usefully replace Galba and other trees of moderate dimension used as windbreaks, and bay leaves could then be collected for distillation at the end of the dry season, April to May, thus providing capital for the upkeep, manuring and extension of windbreaks which at present is withdrawn from the primary crop.

The marketing of Bay Oil products needs further attention. St. Lucia Bay Rum compares most favourably with the American article which at present holds the London market and with judicious advertisement the position could be reversed. Members of the Parliamentary Delegation visiting this Colony during the year were presented with neat samples of St. Lucia Bay Rum in stoppered flasks and were delighted with the product.

The following collections were made as against 1924 and 1925 crops :—

Year.	Variety.	Total weight leaves (lb).	Average yield 1 tree (lb).
1924	Trinidad	426	38·0
1925	Trinidad	543	49·4
1926	Trinidad	537	44·7
1924	Dominica	676 5	56·4
1925	Dominica	598	49·8
1926	Dominica	657	54·7
1924	Montserrat	610	47·0
1925	Montserrat	561	43·2
1926	Montserrat	631·5	47·8
1924	St. Lucia	264·5	24·0
1925	St. Lucia	325	32·5
1926	St. Lucia	355·7	35·5

Coconuts.

The common coconuts have carried a small crop of nuts of moderate size, but ample manure and water is needed to induce the palms to crop well, the tapering stems indicate that the first three years growth took place under most favourable conditions and so large bases were produced, and that subsequently, the exhaustion of the soil and the lack of water restricted the growth and caused tapering of the stem.

Measurements taken shew that these palms are in far better condition than many coconuts considered to be commercial propositions on several estates.

With the provision of Bengal beans as a cover crop and supplies of stable manure made by the "Adco" process it will be possible to experiment on these palms to decide whether they can produce an economic crop, apart from this they are of primary value as windbreaks.

Dwarf Coconuts

The dwarf coconuts planted during 1921 flowered for the first time during the year and have since produced several branches of flowers, none of which have proved fertile owing to abortive pollen. The trees are in the meantime becoming better developed and are expected to become mature and set fruit in 1927.

The imported nuts planted in 1923 are doing well.

Common Limes.

This plot has received the usual mulching and forking, but manure in sufficient quantity was not available for manurial experiments. Forking down to a depth of 8—10 inches can be safely practised on this plot, as the annual forking and periodical hoeing have forced the roots away from the surface and the dry nature of the site has also encouraged deep-rooting.

The latter factor has been considered a possible development against Wither-tip disease and a start has been made in budding limes on the sour orange stock in order to grow these in the drier situations. A greater financial outlay is necessary for the continuance of this work.

Spineless Limes.

This plot has been laid out for work in green manures as compared against the limes without cover-crops.

The outbreak of Wither-tip disease of limes which occurred in March of the present year (1927) has not seriously affected limes at the Station, and this suggests that limes may be grown under the drier conditions, with a controlled water supply such as irrigation would give, in order to evade this disease.

According to F. G. Harcourt in his address "Lime Varieties in Dominica," the varieties "Tahiti, Bear's Seedless and Woglums' lime approximate in essential points the West Indian Lime, Tahiti and Bear's in flavour of juice, acidity and aroma of expressed oil and Woglums' lime in acidity and aroma of oil." These varieties have so far proved immune to the Wither-tip disease.

Two other varieties of lime, the "Rangpur" and *Citrus aurantifolia* have been established in the nurseries. As commercial limes both have objectionable features, though immune to Wither-tip, and may prove more suitable for weeding work than for general cultivation.

The work of raising and trying out these and other varieties requires the early attention of this Department, and should have sufficient financial support and an adequate staff to carry out the practical nursery and estate work.

Pineapples.

The "Black Antigua" plot has been kept in good condition and plants have been distributed; plants of several commercial pines were brought from Trinidad by the Agricultural Superintendent and these have done well; larger importations of good pines are now required and this should have the attention of the recently formed Fruit-Growers Association.

Bananas.

Further work in connection with the pruning and manuring of Gros Michel and Short Figs or Canary banana has been done and two new plots have been established for this work. Irrigation is to be provided during drought.

Coffee.

The yield of coffee from the Robusta and Excelsa varieties was small being the first crop.

Coffee has been frequently advised as an alternative crop for banana land thrown out of cultivation owing to Panama disease; a supply of seeds of Robusta and Liberian (Jamaica Blue Mountain) Coffee has been imported and several hundred seedlings are now being potted out.

Camphor.

As stated in the Annual Report for 1925, two samples of leaves and twigs of *Cinnamonum Camphora* were sent to the Imperial Institute for distillation experiments, the report of the Director is as follows:—

IMPERIAL INSTITUTE OF THE UNITED KINGDOM THE COLONIES AND INDIA.

REPORT ON CAMPHOR LEAVES AND TWIGS FROM ST. LUCIA.

The camphor leaves and twigs which are the subject of this report were forwarded to the Imperial Institute by the Agricultural Superintendent and are referred to in his letter No. Ag.B. 213/215 dated 6th November, 1925.

The material was sent at the suggestion of the Imperial Institute in order that the yield of camphor might be determined.

It was considered in St. Lucia that the yield and quality of the camphor might vary at different stages of growth and consequently two samples were supplied, viz. No. 1 consisting of young leaves and twigs of 1925 growth and No. 2 representing ordinary leaves and twigs of 1925 and previous year's growth.

Description

No. 1. This sample consisted of dried leaves and twigs in the proportion of 1·9 parts of leaves to 1 part of twigs.

No. 2. Part of this sample was slightly damp and mouldy on arrival and had apparently become wet during transit. On exposing the material to the air for some days, this mouldy odour disappeared. The leaves and twigs, which were both somewhat browner than those of No. 1, were present in the proportion of 2·1 parts of leaves to 1 part of twigs.

Results of Examination

On submitting the samples to distillation with steam, sample No. 1. which contained 9·6 per cent. of moisture, yielded 2·8 per cent. of oil, or 3·1 per cent. calculated on the moisture-free-material. Sample No. 2 containing 9·1 per cent. of moisture furnished 2·9 per cent of oil or 3·2 per cent. calculated on the moisture-free-material.

The oil from sample No. 1 deposited about 70 per cent of camphor at the ordinary temperature (18°C). Owing to the small quantity of oil available, the separation of a further quantity of camphor from the residual oil was impracticable.

The oil from sample No. 2 deposited 67·2 per cent. of camphor at the ordinary temperature, and by fractional distillation of the residual oil an additional 7·1 per cent. was obtained. The total amount of camphor obtained from this oil was therefore 74·3 per cent.

In the following table these results are compared with those recently obtained at the Imperial Institute with camphor leaves and twigs from Uganda, and with the recorded yields of oil and camphor from camphor leaves from other countries.

Country.	Material.	Yield of Camphor.	Yield of Camphor and Oil
		Per cent.	Per cent.
St. Lucia. Sample No. 1 ..	Air dried leaves and twigs...	Approx. 2·0*	2·8
St. Lucia, Sample No. 2 .	,, ,, ...	2·2 †	2·9
Uganda	,, ,, ...	1·6 *	2·3
Tanganyika... ...	Air dried leaves ...	1·5	2·0
Jamaica	,, ,, ...	1·6	2·0
Malay States ...	Air dried leaves and twigs...	...	0·8 to 1·3 ‡
Italy	Air dried leaves ...	2·4 to 3·0	...
Florida	Green leaves	0·9 to 1·6	1·1 to 2·1
India	Dry leaves (Moisture free). .	1·2 to 2·9 §	...

* Excluding camphor dissolved in residual oil.
† Including 0·2 per cent. of camphor obtained from residual oil by fractional distillation.
‡ Very little oil.
§ Including camphor obtained by the distillation of the residual oil.

Remarks.

The results of this investigation have shewn that the two samples of leaves and twigs, although collected at different stages of growth, contain practically the same amount of camphor which is identical in character. The yields compare very favourably with those recorded for camphor leaves from other sources.

On the basis of these experiments it may be estimated that the air-dried leaves and twigs would yield about 1 per cent. of camphor, and a ton of the material would therefore furnish about 45 pounds of crude camphor, which, at the present price of Japanese crude camphor (about 2s. 9d. per lb. in London), would be worth £6 3s. 9d. The present quotation for synthetic camphor is about 2s. 10d. per lb. in London.

The residual oil, left after the removal of the camphor, was not obtained in sufficient quantity to permit of its complete investigation, but it appeared to be similar in composi-

tion to camphor leaf oils from other sources, and would probably find a market at a low price as a turpentine substitute.

The production of camphor from the leaves as a commercial enterprise has been carried out in Florida, where two companies commenced operations some years ago and a few thousand pounds of camphor were prepared and marketed. It seems however to have been found impossible to procure the camphor sufficiently cheaply to compete successfully with imported Japanese camphor and the synthetic product, and it was stated in 1912 that the operations had been abandoned.

The question whether the enterprise would prove a profitable undertaking in St. Lucia will require careful consideration, taking into account the present price of camphor and the yield from the leaves, but it seems desirable that the possibilities should be fully investigated. In this connection it may be mentioned that certain essential oils which are now being produced successfully on a commercial scale are obtained in yields similar to that from camphor leaves and are approximately of similar value.

As a rule the twigs contain very little camphor and are not worth distilling, and it would therefore be advisable in practice to avoid, as far as possible, the inclusion of a large proportion of twigs.

The Imperial Institute will be pleased to conduct any further investigations relating to camphor production in St. Lucia, and in this connection an examination of the leaves and twigs from individual trees could be carried out in accordance with the suggestion contained in paragraph 3 of the Agricultural Superintendent's letter if the necessary material was supplied.

June, 1926.

Further samples from individual trees are now being prepared to determine whether each tree is producing camphor.

The Camphor tree like the Bay tree has a value as a windbreak, and the incorporation of the trees on estates as secondary crops would definitely raise the value of an estate without further expenditure beyond the initial planting.

The majority of the larger estates also possess stills suitable for dealing with Bay and Camphor during the period January to April when no lime crop is present.

There should be ample scope for use of these sheltering crops in waste corners and on rocky lands where cultivation is difficult; the small planter could also utilise the tree as shelter crop and sell his prunings to the local distilling factory.

Citrus Plots.

The plots have been kept in fair condition; cover crops have been used extensively and have been dug in to provide manure, in addition to applications of pen manure; bananas have been planted as an inter-crop.

Fresh importations of bud-wood are being obtained for budding new varieties on the sour orange stock; Orange "Parson Brown" has thus been introduced.

A variety of large sweet orange very popular in the Soufrière district is being raised in the Botanic Gardens for Reunion budding work; this variety as grown at Soufrière surpasses the ordinary sweet oranges in size, and this is believed to be due to the very favourable conditions for citrus growth in that district.

Alfalfa.

This plot is now being utilised for distribution to planters, the plants with inoculated soil being supplied in boxes It will be interesting to watch the progress of these plants on estates with higher rainfall.

The imported clovers made good progress during the rains and nodules were produced on the three varieties, Red Clover, Pea vine Clover, and White Clover. The red Clover actually flowered. Ants developed a great liking for the root nodules, and the plants succumbed during the dry seasons.

Bengal Bean.

A plot of the Bengal Bean introduced from Trinidad has been planted out to provide seed for distribution to planters. This bean should prove of great value as a cover-crop in coconuts, bananas, mature limes, and as a cattle food, and it is also attracting attention as a crop for fallow cane lands.

Cassava.

The plot of Cassava variety "Blue Top" has been replanted for observation under conditions of deep forking and manurial applications so as to compare with the common method of shallow hoeing and banking over rows of chopped weeds.

Similar improved cultivation and manuring is to be demonstrated with onions and with a collection of Yams recently got together. This work will form part of a series of Small Planters Demonstration Plots, in an endeavour to show the economy of proper tillage and manuring. Large numbers of cuttings of this improved variety of Cassava have been distributed to replace the inferior common white Cassava.

Samples of Cassava products prepared undered the direction of the Department were forwarded to the Director of the Imperial Institute for examination into the market value, food value and demand for these products in the United Kingdom, in order to stimulate the production of this crop which is popular with small planters over large areas of the drier coastal lands.

The following report on the products has been received :—

IMPERIAL INSTITUTE,
SOUTH KENSINGTON,
LONDON, S.W. 7.

REPORT ON CASSAVA PRODUCTS FROM ST. LUCIA.

The samples of cassava products which are the subject of this report were received for examination at the Imperial Institute on the 20th October, 1926, from the Agricultural Superintendent, St. Lucia, and are referred to in his letter No. Ag. U. 213/42 dated 6th September, 1926.

It was desired to ascertain the possibilities of marketing such products in the United Kingdom and also to obtain information regarding their nutritive value.

Description.

The samples were as follows : –

A. Cassava starch.
B. Cassava farine.
C. Roots, washed, sliced and dried.
D. Cassava meal, i.e. milled roots.
E. Grated cassava.

Sample A. This sample, labelled "(a) Cassava Starch," weighed 4 oz. and consisted of small nodules, mostly of good white colour but a small proportion had a cream tint.

Sample B. This sample, labelled "(b) Cassava farine," consisted of 4 oz of coarse powder and lumps of dark cream colour; it contained some fibrous matter.

Sample C. This sample, labelled "(c) Roots, washed, sliced and dried," weighed 3½ oz. and consisted of circular slices of the roots varying in thickness from ⅛ in. to ¼ in.; they were mostly of pale cream colour but a few pieces bore pale brown discolourations.

Sample D. labelled "(d) Cassava meal, i.e., milled roots," consisted of 4 oz. of a coarse dark cream-coloured powder.

Sample E. labelled "(e) Grated Cassava," consisted of 3½ oz. of dark cream-coloured lumps containing some fibrous matter.

Results of Examination.

The samples were chemically examined with the following results :—

Present Samples.

	A Starch. per cent.	B Farine. per cent.	C Roots. per cent.	D Meal. per cent.	E Grated. per cent.
Moisture	14·4	13·6	12·7	12·1	13·8
Crude Proteins	0·1	1·1	1·1	1·0	1·1
Fat	0·1	0·5	0·8	0·8	0·7
Starch (by Acid Hydrolysis) ...	73·6	61·3	62·1	64·6	65·3
Other Carbohydrates, etc. (by difference)	11·3	16·3	18.9	16·7	13·8
Crude Fibre	0·1	5·5	3.0	3·1	3·5
Ash	0·4	1·7	1·4	1·7	1·8
Nutrient Ratio	1 : 851	1 : 71·6	1 : 75·3	1 : 83·1	1 : 73·4
Food Units	85	82	86	86	84

For comparison with these results, the following figures given by other samples of cassava products previously examined at the Imperial Institute may be quoted :—

Previous Samples of Cassava products examined at the Imperial Institute.

	Cassava Starch			Cassava Roots from the Gold Coast.		Dried and Grated Cassava from Nigeria.	Cassava Meal from Mauritius.
	from the Gold Coast.	from Rhodesia.	from Uganda.	No. 1.	No. 2.		
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
Moisture	21·7	14·4	1·31–15·2	12·4	10·1	11·4	14·25
Crude Proteins ...	...	0·1	Nil–0·5	3·8	3·5	2·1	1·65
Fat	...	0·15	...	0·9	0·4	1·1	0·1
Starch (by acid hydrolysis)	77·7	82·8	80·6–81·7	73·2	77·5	82·0	71·75
Other Carbohydrates, etc. (by difference) ...	...	2·35	...	7·2	5·8		4·9
Crude Fibre ...	...	Nil	...	1·3	1·7	1·8	6·3
Ash	0·06	0·2	0·4–0·6	1·2	1·0	1·6	1·05
Nutrient Ratio ...	...	1 : 855	. .	1 : 21·7	1 : 24·1	1 : 40·3	1 : 46·6
Food Units ...	...	86	...	92	93	90	81

Gelatinisation tests which were carried out with the cassava starch from St. Lucia (Sample A) showed that as regards consistency and colour this material did not give quite such good results as commercial "tapioca flour No. 1," but somewhat better results than "No. 2." The percentage of starch (73·6) as determined by acid hydrolysis is low as compared with that in good cassava starch which should amount to 82—83 per cent. The colour of the material and the percentage of starch in it might be improved by further washing.

The other samples (B, C, D and E) resemble one another fairly closely in chemical composition. The roots (Sample C) did not contain as much starch as samples received from the Gold Coast, and the meal (Sample D) contained less starch than a sample from Mauritius.

Commercial Value.

Samples of the products were submitted to a firm of importers of farina and starches who reported that the cassava starch (Sample A) is similar to the manioc starch which is imported into this country in fair quantities from Brazil and realises 18*s.* 6*d.* to 19*s.* 6*d.* per cwt. The present sample of cassava starch however is not so fine as the Brazillian material.

Products of the nature of the ground and milled root represented by samples B and D were used to some extent during the war for food purposes but are not now being imported.

Cassava roots and grated cassava represented by samples C and E have been used in the manufacture of cattle foods and for this purpose are worth about £7 to £9 per ton. The firm mentioned that competition is very keen in this trade and that the producers would have to compete with material from several foreign countries, especially Java.

Remarks.

The cassava starch represented by Sample A is of good quality. As already stated it is similar to the manioc starch from Brazil, and it also resembles the tapioca flour which is imported in large quantities from the Straits Settlements and the Dutch East Indies. It is however coarser than those products and should be ground more finely before shipment. Information should be furnished to the Imperial Institute as to whether consignments of this starch could be produced for export at a price of about 18*s* 6*d* to 19*s* 6*d* per cwt., in London.

The products represented by the four other samples would only be saleable in this country under present conditions for use as cattle food. If it is considered that a price of £7 to £9 per ton in London would be remunerative, trial shipments of the roots might be made in the sliced or grated forms represented by samples C and E.

12th February, 1927.

It appears from the report that the Cassava starch which was of good quality should be further washed and then ground to a finer powder, it will then realise 18/6 to 19/6 per cwt., London ; sliced or grated roots would realise from £7 to £9 per ton

The preparation of this product is a simple matter, and shipments of starch could be made without further investigation, a trial shipment of sliced or grated roots would determine the economic profit on production of these substances ; the present method of manual preparation is laborious and much scope exists for the use of mills and slicing machines.

Appreciation is due the Imperial Institute for the examination and reports on the Bay and Cassava products.

FOREST CONSERVATION.

In co-operation with the management of a local estate a large number of Australian hardwood seedlings have been raised in the nurseries for estate supply at cost price, the management supplied the seeds from which plants have been raised and planted out on the estate and are doing well.

The plants comprised Acacia 5 species, Eucalyptus 16 species, Casuarina and other useful trees, specimens of which have been presented to the Botanic Gardens.

If this introduction proves successful the trees will form a valuable addition to the timber of the Colony, and will replace the inferior local timbers. A start has been made in raising seedlings of Casuarina and Eucalyptus obtained from seeds of established trees at Reunion. These have been planted out along swamp lands near several towns in connection with the reclamation of these unproductive areas.

No further work on reafforestation has been possible owing to lack of funds.

The total amounts of primary forest products exported during the year represented 702,166 cubic feet of timber with a value of £8,255 ; there is no reinvestment of a part of this revenue by afforestation and little by an extension of agricultural tillage, as the chief products logwood, charcoal and firewood are obtained from exposed situations where there is every tendency to aridity ; charcoal alone is also consumed locally in large quantities estimated to be above 2,400,000 lb or 512,000 cubic feet per annum and an amount of 1,943,760 lb was also exported as against 1,157,370 lb in 1925.

Much of the land from which these products are derived is undoubtedly worthless for agricultural purposes, but this position is largely due to the retrogressive clearing to which the land has been subject for long periods ; any further reduction of humidity and climatic equibility would be a serious loss to the whole island. The position merits the investigation of an expert before further exhaustion takes place ; if this cannot be obtained a temporary control of forest utilisation should be aimed at in order to permit regeneration.

CONTROL OF INSECT PESTS.

The principal crops remained free of serious insect pests during the year, the following minor pests were observed :—

Sugar-cane.

An attack of Moth-borer (*Diatraea saccharalis* Fabr.) was observed in cane cuttings planted in land recently in fallow ; improved selection of cuttings with treatment by soaking these in Bordeaux mixture was advised ; it was also suggested that land should be fallowed in leguminous crops when possible to prevent the growth of Para grass as a host for cane pests.

Although of general occurrence no serious infestation by Moth borer has been observed, perhaps owing to effective natural control ; elsewhere this pest is capable of extensive damage through causing "dead-hearts" in growing cane, and any increase should be watched for.

The small black beetle reported on last year attacking roots of sugar-cane has been identified by the Entomologist as *Hopatrinus gemellatus* Oliv.

Citrus.

Scale insects were somewhat prevalent during the year and increased coincidently with periods of low rainfall and consequent reduced control by entomogenous fungi ; the spread of Snow scale *Chionaspis citris* Comst, and Purple scale (Lepidosaphes beckii, Newm) was most marked on lime trees.

A small pale green weevil which feeds on lime leaves appears to be generally distributed in the plantations.

Coconuts.

Scale insects increased during dry weather and exposed palms particularly suffered from Snow scale (*Diaspis boisduvalii*, Sign.), White fly (*Aleyrodicus cocois*, Curtis.) and Mealy bud *Pseudococcos nipae*, Mask) causing the premature loss of the lower leaves.

An infestation of a small black and gold weevil was examined in young palms about a year old from which fourteen larvae were obtained, of these only one reached the adult stage; the palms were killed by the larval tunnels produced throughout the rachis of the leaves.

The affected palms and fallen leaves were destroyed by fire.

Bananas.

The Banana borer *Tomarus bituberculatus* Beaud.) and the weevils *Cosmopolites sordidus* Germ., and *Metamasius sericeus* Oliv. have been dealt with by the Banana Inspectors when examining banana plants for Panama disease; the variety "Macabou" a cooking banana is usually the most infested with these pests.

Examination and sectioning of bullheads has been continued on the lines mentioned in the report for 1925, with good results.

Scarring of the fruit of banana Gros Michel was pronounced in one district and rendered the fruit unsaleable owing to black scratches produced towards the tips of the fingers; the cause has not been determined but is thought to be a Locustid.

Cotton.

Pink bollworm of cotton (*Gelechia gossypiella*) and leaf blister mite (*Eriophyes gossypii*, Banks) appeared in small plantations of Sea Island Cotton; fumigation and the provision of clean seed by the Department was arranged for in the first case, hand picking and rotation was advised as control for the latter.

CONTROL OF FUNGUS DISEASES.

Sugar-cane.

The search for occurrence of Gumming disease of cane (*Bacterium vascularum* Cobb.) has been continued and slight infections have been found on several estates, the varieties affected being B A 6032, Sealy Seedling, Bourbon, B 11569 and B 149 in order of susceptibility; in no case has gum been observed, although red vascular bundles have been found in ripe canes. The most marked symptoms have been the pale yellow or whitish streaks occurring in leaves particularly in young shoots arising from the stool, and without exception these symptoms are the more marked in heavy land where cultivation is defective and root penetration is difficult.

In most cases it has been advised to change to resistant varieties such as B H 10 (12), B 116 and other new canes recently imported and to shorten the ratoon age of canes by more frequent planting together with improved cultivation.

Cacao.

Phytophora and Diplodia Pod-rots were pronounced in July and August during continuance of wet weather; Rosellinia root disease was also extended, one estate being forced to consider an alternative crop owing to losses caused by this fungus.

Much could be done to check the attacks of Pod-rots by careful pruning of the cacao and pruning or removal of much of the shade trees; it is noteworthy that elsewhere cacao appears to be successful without shade, a gradual approach to this condition should be possible in many ravine cultivations in St. Lucia.

Limes.

(A short review of information available at the time of writing is included in this report which is late owing to pressure of work.)

Wither-tip of limes (*Gloeosporium limetticolum* Clausen.) was detected in the lime cultivations in March, 1927; a tour of estates made by the Mycologist, Dr. Briton-Jones, of the Imperial Department of Agriculture, with the Agricultural Superintendent in May, 1927, resulted in the conclusion that spraying was ineffective and uneconomic, but that much might be done to encourage greater production by improved cultivation; in cases where irrigation is possible this might assist in producing a crop free from disease where otherwise drought conditions would prevent a good crop forming.

Increased exposure to sunlight of lime trees when provided with wind-breaks can be safely considered, provided sufficient soil water is available. Budding of the shallow rooting lime upon the deep rooting sour orange stock will enable budded limes to thrive under more arid conditions.

An interesting report by the Mycologist on limes and other crops has been circulated and future work including the provision of limes immune to Wither-tip has been suggested: it is hoped that these and other vital matters, including the provision of an adequate agricultural staff and finance as affecting the whole position of agriculture in St. Lucia will shortly come up for discussion and that the agricultural possibilities will be realised.

Bananas.

Panama disease caused by *Fusarium cubense* E.F.S. has received increased attention during the year, the number of Gros Michel plants inspected and destroyed being as follows:—

	Number of stools of Gros Michel Inspected.	Number with Panama disease.
Estates ...	38,010	221
Peasants ...	58,785	683
Total ...	96,795	904

The totals represent Gros Michel stools inspected and treated in a total banana area of 700 acres; exclusive of inspection conducted through the estates of the local Banana Coy. Panama disease is with few exceptions now generally distributed in the older estates and it is a matter of about three to four years before the infected cultivations become unproductive. The section system has been employed and has resulted in reducing the early infections to a low figure and thus allowing three years longer production to banana estates planted under this system than would have been possible with the old system planting.

In planting new forest lands this system has had encouraging results giving an incidence of disease of about 1 in 1,000, as against 1 in 100 when using unsectioned plants, the *rate* of spread is accordingly reduced. The cost of this disease inspection by the employment of two Inspectors was about £100. This has prevented a rapid increase of disease generally and allowed of recovery of invested capital in bananas, and it is advisable that such inspection work should continue both as an economic measure and from its educational effects on peasant planters.

Co-operation by planters has improved considerably, one case only of neglect by a small planter to treat Panama disease and Weevil borer was taken to a District Court.

PLANT QUARANTINE.

Ninety-two importations of plants, cuttings and seeds were treated in the Fumagatorium, in compliance with the Plants Protection Ordinance, this is a large increase over previous years; a number of diseased citrus importations were destroyed, the introduction of several weevils and borers was also prevented.

Proclamations in Force under the Ordinance.

The Government may prohibit the importation of any planting material which may be the means of introducing a dangerous disease or pest.

The following prohibitions are in force:—

Coconuts.

(1) Coconuts, coconut plants or any part thereof from all places, except under licence.

Bananas.

(2) Banana plants or any parts thereof that may have come directly or indirectly from Trinidad, Tobago, Grenada, Central and South America.

Cacao.

(3) Cacao plants from South America

Citrus (Orange, Grapefruit, Limes, etc.)

(4) The importation of all plants of the Citrus family is absolutely prohibited except under licence.

(5) Coffee, Mango, Guava Sapodilla, and Star Apple plants from Bahama Islands, Ceylon, Cuba, India, Jamaica and Phillipine Islands.

COTTON.

(6) Cotton seed and all parts of the cotton plant are entirely prohibited except under licence, and subject to heat or fumigation treatment on arrival.

SUGAR-CANE, ETC.

(7) All plants of the Grass family including Sugar-cane, Sweet corn, Sorghum, etc., are totally prohibited except under licence.

Exportation of Plant Material.

Exporters of fresh fruits, plants and seeds may obtain information on overseas quarantine and certificates when necessary from the Agricultural Department.

DISEASES AND PESTS WITHIN THE COLONY.

Under the Plants Protection Ordinance the existence of the following diseases and pests should be notified to the Agricultural Department :—

Panama disease, Marasmius disease, Banana Weevil and Borer affecting Bananas.
Wither-tip disease of Limes ;
Budrot disease of Coconuts ;
Gumming disease of Sugar-cane ;
Pinkboll worm of Cotton ;
and the occurrence of the parasites Love Vine and Bird Vine.

The Agricultural Officers served notices for the treatment of Bananas attacked by Panama disease, Weevil and Borer, and Budrot disease of Coconuts.

IMPORTATION OF BEES.

Under Ordinance No. 18 the importation of any bee or bee-keeping apparatus if used, is prohibited except under certificate approved by the Agricultural Superintendent to the effect that Foul Brood has not existed in the apiary or in connection therewith.

ANIMAL QUARANTINE.

Under Ordinance No. 17 the Governor in Council may prohibit the importation of animals or farm products which may be a means of introducing disease ; the importation of animals and farm products from the United Kingdom, Isle of Man, and Channel Islands is prohibited ; the importation of animals and farm products from Nevis and Grenada was temporarily prohibited on account of Anthrax.

IDENTIFICATION AND ANALYSIS.

Examination and identification was made of miscellaneous plant and mineral products submitted during the year.

Information was given on the production of synthetic manure by the "ADCO" process, a specimen clamp being made in the Botanic Gardens ; lime products and bay products were tested for acid and phenols content respectively.

PROGRESS IN THE CHIEF INDUSTRIES.

SUGAR.

Prices for sugar were low previous to and during the crop resulting in a somewhat reduced output, although still an advance on the output for 1924.

The sugar market improved steadily toward the end of the year being favourably influenced by the Cuban restrictions on sugar production ; the average price per ton of West Indian crystals was £29 9 0 as against £30 10 0 in 1925.

An increased production with an improved market for Molasses and Syrup was experienced.

The total amount of sugar made was 6,021 tons as against 5,564 tons for 1925, the following sugar products were exported :—

	1925.	Value. £	1926.	Value. £
Usine Sugar (tons) ..	4,888	72,559	4.757	68,443
Muscovado sugar (tons) ...	430	4,774	456	5,414
Molasses & Syrup (galls.) ...	153,413	7,818	156,424	8,658
		£85,151		£82,515

RUM.

The production of rum again decreased, the following quantities being made in the distilleries :—

in 1925 ... 45,762·2 proof gallons.
in 1926 ... 34,161·3 „ „

A disastrous fire involving the almost complete destruction of one of the distilleries occurred in March, 1926.

There has been no extension in the area under cane, which remain at about 4,750 acres. This is a large area compared to the crop produced, (an average of 2 tons of sugar per acre) the small yield being due to the fact that cultivation methods are mainly out-of-date and lag behind factory equipment, which has been considerably improved in recent years.

Economic progress now lies in introducing improved cultivation by means of implemental tillage, more attention to soil conditions for rational manuring and rotation, with the gradual replacement of worn-out varieties by new, high yielding and disease-resistant canes.

For this work the services of a Sugar Technologist are plainly indicated. He could be employed on co-operative lines by the factories, and an early saving could be made by the greater utilisation of factory by-products.

CACAO.

The cacao market improved during the year and provided a workable price for best cacao, prices ranging from 57/- to 68/- per cwt. with a further advance at the end of the year.

The exports of cacao were as follows :—

1925 ... 10,443 cwt. valued at £22339
1926 ... 10,036 „ „ „ 22,454

The advices of cacao brokers show that St. Lucia grades compare well with other kinds but are neglected owing to the small parcels received. This could be remedied by grading and pooling the total crop for shipment in bulk as is done elsewhere, by a Cacao Growers Association.

More attention is being given to the cultivations and an extension in area is foreseen ; more permanent results are to be expected from attention given to existing cultivations and the method of marketing.

LIMES.

High prices were realised for lime oils during the year, ranging from 25/- to 46/- per lb. for handpressed oil and from 9/6 to 36/- for distilled oil.

Concentrated and raw lime juices were sold at a moderate price throughout the year and all markets had become more normal towards the close of the year.

Increased attention was given to lime cultivation and the crop though extended was well collected ; the total crop of the Colony calculated in barrels of fruit was :—

1925	63,406 barrels,	value as exported lime products	£27,835
1926	59,415 „	„ „ „	28,245

This industry is now the second most productive in the Colony but its position as such is threatened by the Wither-tip disease. To evade this, financial provision should be made to introduce resistant limes, otherwise alternative crops may become necessary.

The area in lime cultivation now covers 2,650 acres.

COCONUTS.

The production of coconuts has increased owing to young groves coming into bearing and a large crop has been made ; much of this has been dealt with by the local Oil Mills in

the manufacture of oil and soap, the exports of which are correspondingly augmented as shown below: —

	1925.	Value. £	1926.	Value. £
Coconuts (number) ...	123,516	432	118,501	380
Coconut Oil (gall.) ...	6,323	791	19,081	3,846
Copra (lb.)	221,944	3,563	178,234	1,808
Coconut Meal (lb.) ...	28,917	106	95,011	777

BANANAS.

The production of bananas has increased more than ten-fold during the last two years due largely to the operations of a Banana Company and the organised collection of persants' bananas for shipment.

The following returns show the growth of this industry mainly as Gros Michel bananas:—

Year.	Bunches.	Value. £	s.	d.
1911	59	2	0	0
1912	30		15	0
1913	1,246	19	0	0
1914	132	10	0	0
1915	211	16	0	0
1916	58	4	0	0
1917	48	4	0	0
1918	93	6	0	0
1919	1,702	119	0	0
1920	1,353	131	0	0
1921	2,616	291	0	0
1922	6,957	629	0	0
1923	4,081	291	0	0
1924	4,190	256	0	0
1925	20,818	1,374	0	0
1926	46,209	4,358	0	0

The Agricultural Department has been active in organising the estimation, collection and grading of bananas at various points.

Shipment of bananas from St. Lucia to New York took place on four occasions in ventilated holds, the temperatures of which were taken by the Department's instruments as recorded below:—

St. Lucia.	Max. Temperature in holds. F.	New York.	Min. Temperature in holds. F.	Bunches.	Condition on arrival.
10. 11. 26 ...	80°	17. 11. 26...	40°	4,673	Moderately ripe.
1. 12. 26 ...	82°	7. 12. 26...	61°	6,494	Not ripe.
22. 12. 26 ...	79°	29. 12. 26...	54°	7,349	Rather ripe.
12. 1. 27 ...	77°	19. 1. 27 ...	60°	5,906	Moderately ripe.

The present yield of all Gros Michel cultivations in the Colony is estimated to reach 70,000 bunches during the year; the industry has, however, suffered a serious check owing to the closing down of the local Banana Company and cessation of banana steamers.

It is hoped that the crop obtainable over an area of about 885 acres will be shipped by another steamship line to which end negotiations are being made intercolonially and with the Home Government.

Alternatively, dried bananas offer an inducement to the banana planters, a moderate investment in drying apparatus will allow of the production of dehydrated bananas which can be shipped under ordinary freight conditions; with the further advantage that the Short Fig and probably others immune to Panama disease may be utilised; further enquiry is being made on this subject.

Two blocks of land were inspected and allocated for possible future use as banana nurseries, no further progress is at present possible owing to absence of Government funds for this purpose.

PROGRESS IN MINOR INDUSTRIES.

BAY OIL AND BAY RUM.

The Bay Oil Factories dealt with a smaller crop than in the previous year mainly owing to the weak American market; further efforts might be made to place these products on the British Market.

Mentholated Bay Rum has also been manufactured.

Local rum owing to its immaturity has been found unsuitable for the manufacture of Bay Rum. The rum could probably be ripened by the use of hydrogen peroxide, and if this were successful it would benefit the local rum industry.

The exported amounts were:—

	1925	Value £	1926	Value £
Bay Oil ...	2,313 lb.	786	2,238 lb.	679
Bay Rum ...	17,457 galls.	3,249	14,062 galls.	2,517

Cotton.

An increase crop of Sea Island cotton was obtained and realised a good price.

Bee-Keeping.

Increased attention has been given to apiculture and several new apiaries are being set up. A good honey crop was made during the year and the following products were exported:—

	1925	Value £	1926	Value £
Honey (lb.)	43,862	463	129,152	737
Wax ,,	426	23	217	8

Copra has been utilised by the local Oil Mills in the manufacture of Coconut Oil and Cake, and the following products have been exported:—

	1925	Value £	1926	Value £
Coconut Oil (gal.)	6,323	791	19,081	3,846
Cocoanut cake (lb.)	28,917	106	95,011	777

Soaps of good quality containing a high proportion of natural glycerine have been manufactured experimentally and provision has been made for a local trade in soap which may be extended overseas.

The attached list of exports shows considerable activity on the part of small holders as growers of minor products, ground provisions and fruits, in connection with which better prices would be realised by more attention to quality and preparation for market.

The general agricultural output has increased and a larger income was derived from agricultural practice 1926 than in the previous year. Several important industries however are still unable to show a good financial position so that any approach to increased taxation in an endeavour to balance the Colony's expenditure, tends to reduce output and revenue and discourage investment.

A depressing occurrence during the year was the failure of a firm of brokers and importers in the United Kingdom involving the loss of much produce shipped from several local estates.

EXPORTS FROM ST. LUCIA.

		1925	Value £		1926	Value £
Sugar Products:—						
Sugar, Vacuum Pan ...	Tons	4,888	72,559	Tons	4,757	68,443
,, Muscovado ...	,,	430	4,774	,,	456	5,414
Molasses and Syrup ...	Gall.	153,413	7,818	Gall.	156,424	8,658
Rum	p. Gls.	...	...	p. Gall.	34,161·3	...
Cacao Products:—						
Cacao	Lb.	1,169,697	22,339	Lb.	1,124,080	22,454
Lime Products:—						
Concentrated Lime Juice ...	Gall.	40,858	9,988	Gall.	35,234	7,855
Raw Juice	,,	23,428	1,070	,,	43,893	2,121
Distilled Lime Oil ...	,,	982	2,606	,,	1,084	9,181
Essential H.P. Otto of Limes	,,	500	2,440	,,	577	6,260
Green Limes ...	Barrels	1,691	1,625	Barrels	2,810	2,720
Lime Seeds	Lb.	34,091	116	Lb.	34,602	106

EXPORTS—(*Contd.*)

		1925	Value £		1926	Value £
Coconut Products:—						
Coconuts ...	.. Number	123.516	432	Number	118,501	380
Copra ..	... Lb.	221,944	3,563	Lb.	178,234	1,808
Coconut-meal ...	... ,,	28,917	106	,,	95,011	777
Coconut Oil ...	... Gall.	6,323	791	Gall.	19,081	3,846
Honey Products:—						
Honey ...	... Lb.	43,862	463	Lb.	129,152	737
Beeswax ...	... ,,	426	23	,,	217	8
Cotton Products:—						
Sea Island Lint	... ,,	662	77	,,	1,618	161
Cotton Seed ..	...	...	...		...	...
Bay Products:—						
Bay Oil (9lb. per gall.)	... Gall.	257	786	Gall.	2,238	679
Bay Rum ...	... ,,	17,467	3,249	,,	14,062	2,516
Banana Products:—						
Bananas ...	... Bunches	20,818	1,374	Bunches	46,209	4,358
Spices:—						
Cinnamon ...	... Lb.	...	...	Lb.	17	1
Ginger ...	... ,,	107	2	,,	...	...
Nutmegs ...	... ,,	9,588	494	,,	6,396	326
Mace ...	... ,,	2,068	190	,,	1,305	144
Vanilla ...	...	...	...		...	...
Kola Nuts ...	... ,,	13,185	81	,,	6,018	64
Various Products:—						
Oranges ...	... Number	141.490	177	Number	73,892	79
Mangoes ...	... ,,	...	1,157	,,	...	1,559
Hides & Skins ...	... ,,	1,561	425	,,	1,338	329
Plantains ...	... Bunches	113	12	Bunches	277	23
Arrowroot ...	... Lb.	...	...	Lb.	4,729	72
Farine ...	... ,,	8,622	60	,,	6,792	63
Yams ...	...	...	...		...	...
Fish Oil ...	... Gall.	54	27	Gall.	42	66
Whale Oil ...	... Gall.	...	...	Gall.	1,032	128
Forest Products:—						
Logwood ...	... Tons	779	2,304	Tons	1,507	4,986
Pimento Sticks	... C. Ft.	...	...	C. Ft.	292	32
Firewood ...	... ,,	200,960	810	,,	164,736	694
Railway Sleepers	... ,,	200	20	,,	220	25
Brooms (made from palm leaves)	... Doz.	753	38	Doz.	792	33
Posts ...	... C. Ft.	546	17	C. Ft.	419	19
Cedar ...	... ,,	3½	1	,,	195	30
Boards (native)	... ,,	299	32	,,	482	45
Hoe Sticks ...	... ,,	142	15	,,	391	15
Spokes ...	... ,,	692	75	,,	140	14
Charcoal ...	... Lb.	1,751.340	1,930	Lb.	1,943,760	2,359
Felloes ...	... C. Ft.	23	2	C. Ft.	...	...
Naves ...	... ,,	...	...	,,	...	...
Shingles ...	... Number	6,000	3	Number	2,600	1

AGRICULTURAL INSTRUCTION IN THE PRIMARY SCHOOLS.

REPORT OF THE AGRICULTURAL SUPERINTENDENT ON THE TEACHING OF AGRICULTURE IN THE PRIMARY SCHOOLS OF ST. LUCIA DURING 1926.

This forms the eighteenth report on the examination of Primary Schools.

The examination was conducted by the Assistant Agricultural Superintendent between November 10th, 1926, and January 21st, 1927. Owing to the irregular manner of closing schools for vacation the Canaries School could not be inspected until January 21st, 1927.

Seventeen schools were examined and the majority showed improvement when compared with last year's results.

The number of pupils presented for examination this year was 342 or 88 per cent. of the agricultural classes as against 334 or 86 per cent. last year, of this number only eighteen were girls. More girls should be taught agriculture particularly in the country districts where this forms the chief means of subsistence on leaving school; with continued emigration of able males and the development of the independent small holder more female labour will be required, and at present, female labour is untaught and inefficient.

Proper mauuring is done only at a few schools, and after garden plots are once laid out very few Teachers attempt to rearrange them. Old enfeebled stocks are still generally used for budding and grafting experiments, and these should be replaced by young vigorous and improved fruit trees of value as fruit producers.

Attention should be given my suggestion contained in the report of last year that pupils should study plants and crops as grown commercially in their locality; the canefields, cacao, lime and coconut plantations provide ample material for demonstration on practical lines and would familiarise pupils with agricultural operations. At present few pupils can give a reliable account of the crops grown in their district and their observations are restricted to the cultivation of a few vegetables.

EXAMINER'S REPORT.

LABORIE R.C. BOYS'.

Good use has been made of this garden throughout the year. Surprise visits of inspection found the garden cropped with local and English vegetables. Experimental work particularly with manures was carefully planned and carried out. Budding and grafting of economic plants has received increased attention which should be kept up. The beds and walks should be reformed.

SALTIBUS R.C. JUVENILE.

Both the ornamental and economic sections of this garden were in good condition at the time of inspection.

The garden was cropped with yams, cassava, bananas and other economic plants, and simple variety and manurial experiments in connection with these crops were being carried out. Budding requires more attention and a liberal application of pen manure is necessary when rearranging the beds.

RIVIERE DOREE JUVENILE.

The improvement noted in this school last year has been maintained. The ornamental sections are chiefly cared for by the girls, who take great interest in them The economic sections were cropped with bananas, cassava, yams, potatoes and other useful vegetables. Manurial as well as staking experiments were arranged in connection with these crops. The work in the class room has shown improvement.

CHOISEUL R.C. BOYS'.

Improvement was shown in both the theoretical and practical work at this school and the experimental work was chiefly in connection with the principal crops grown in the district such as potatoes and cassava. New beds of orange plants for budding purposes should be raised every year or this work will suffer.

LA RESSOURCE R.C. JUVENILE.

A good deal of practical work has been done during the year in this school garden. The beds have been manured and rearranged and were cropped with a variety of useful vegetables. Budding and grafting have received proper attention and both budded oranges and grafted mangoes have been supplied to other schools. The theoretical knowledge requires more attention.

BABONNEAU R.C. JUVENILE.

This school has formed a large new garden this year. The old garden is now purely ornamental and is creditably worked by the girls. The new plot was cropped with bananas, peas, ginger, cassava, canes and other vegetables. A few simple experiments were arranged with some of these crops, and proper attention has been given to the class work as well as the practical demonstrations.

DENNERY R.C. BOYS'.

Useful work has been done at this school, but the condition of the garden should have been better at the time of inspection, since advantage is taken of the overflow of the reservoir of the Waterworks to irrigate.

New beds of oranges should be grown for budding operations instead of holding on to played out stock; grafting by approach should be included in the practical demonstrations.

MON REPOS R.C. JUVENILE.

This school has shown no appreciable improvement. The garden plot should be flat forked, manured and the beds and walks rearranged and cropped in an orderly manner. The work of the class room should be demonstrated in the garden.

MICOUD R.C. JUVENILE.

The site of this school garden has been again changed to a plot near the schoolmaster's house. This plot is very sandy and requires careful handling to give good results. At present a large quantity of pen manure and green dressing is being dug in to improve the texture. This should be continued.

At the time of inspection the garden was cropped with groundnuts, cabbage, cotton, pawpaws and other vegetables all of which were making good growth. The practical work included budding, grafting and propagation by circumposition.

VIEUX-FORT R.C. BOYS.'

The theoretical knowledge in this school was good, and the practical demonstrations well arranged, but the condition of the garden requires improvement. The garden is wind swept and a good hedge is necessary if useful work is to be continuous. The beds were cropped with cotton, sugar-cane, groundnuts and other vegetables. Flat forking and rearrangement of beds should be done early.

CASTRIES ANGLICAN JUVENILE.

The garden was clean, well arranged, and cropped with a useful variety of vegetables, fruit trees and ornamental shrubs. The practical demonstrations included propagation by grafting, budding and circumposition. Liberal applications of pen manure, green dressing and rearrangement of beds are prominent features of the work at this school. The theoretical knowledge was good.

SOUFRIERE R.C. BOYS'.

This school presented a large agricultural class and the theoretical knowledge was good. The soil of this garden is very sandy and could be greatly improved by green dressing and liberal applications of pen manure which can be readily obtained. The practical demonstrations were sufficient to illustrate the class work, but simple experiments with crops should be included to make the work more interesting.

CASTRIES R.C. BOYS'.

This school also presented a large class and the theoretical knowledge of the pupils was very satisfactory. The garden is small but the note book shows that continuous use has been made of it in order to demonstrate fully the class work. The beds and boxes were cropped with a variety of useful vegetables and the fruit trees in various corners of the yard were well cared for.

ANSE-LA-RAYE R.C. JUVENILE.

This garden has been washed by the river during the year, but in spite of this a good deal of useful work has been carried out.

The practical demonstrations include propagation of economic plants by budding, grafting, circumposition and other methods. The thooretical knowledge was good.

CASTRIES WESLEYAN JUVENILE.

The theoretical knowledge was very good, and the practical demonstrations well arranged. Proper attention has been given to the propagation of plants by budding, grafting and other methods; and simple experiments have been aaranged in connection with the plants grown. The garden requires to be built up by the addition of soil.

FORESTIERE WESLEYAN

The agricultural work at this school has shown improvement generally. Good use is being made of the land around the school which formerly was in bush, and crops such as canes, bananas, peas, yams and other useful vegetables are now grown. A new school garden is laid out in a part of this reclaimed area and is well cropped. The pupils take great interest in agricultural work going on around the school.

CANARIES R.C. JUVENILE.

Agriculture at this school was unsatisfactory, compared with the previous year. At the time of inspection, animals had damaged the garden considerably, but apart from this the usual note book was not kept consequently the pupils could not be properly examined on work done during the year.

List of Marks and Standing of Schools in Agricultural Teaching.

Schools.	No. of Pupils examined.	Condition and use made of Garden.	Practical work and Knowledge.	Theoretical Knowledge.	Total.	Percentage.	Result Note.
Possible Marks.	—	10	10	10	30	100	—
Castries Anglican Juvenile	39	10	10	9	29	96·6	E.
Castries R.C. Boys'	50	8	9	10	27	90·	E.
Rivière Dorée Juvenile	10	10	10	7	27	90·	E.
Castries Wesleyan	23	8	9	10	27	90·	E.
Micoud R.C. Juvenile	12	8	9	10	27	90	E.
Dennery R.C. Boys'	28	9	8	9	26	86·6	V.G.
Choiseul R.C. Boys'	22	8	9	8	25	83·3	V.G.
Laborie R.C. Boys'	22	8	8	9	25	83·3	V.G.
Soufrière R.C. Boys'	45	7	7	10	24	80	V.G.
Saltibus R.C Juvenile	8	8	8	8	24	80	V.G.
Forestiere Wesleyan	5	9	8	7	24	80	V.G.
La Ressource R.C. Juvenile	5	9	8	7	24	80	V.G.
Babonneau R.C. Juvenile	26	8	8	8	24	80	V.G.
Anse-la-Raye R.C. Juvenile	9	7	9	8	24	80	V.G.
Vieux-Fort R.C. Boys'	24	7	8	7	22	73·3	G.
Mon Repos R.C. Juvenile ...	10	7	7	5	19	63·3	G.
Canaries R.C.	12	7	6	7	20	66·6	G.

R. W. NILES, *Examiner.*
March 31st, 1927.

EXAMINATION OF TEACHERS IN AGRICULTURE

The annual examination in Agriculture of Probationers and Pupil Teachers was conducted by the Agricultural Department.

Only 35 per cent. of the candidates obtained half marks and over.

The questions set were of a more practical than theoretical nature but covered a wider sphere and required a little thought. Few teachers really applied this and answers were made to imaginary questions rather than an elementary attempt to answer the questions set.

Descriptions of plant organs should be in simple terms avoiding long words and more use could be made of diagrams on the blackboard using the plant as a specimen.

The schedule of marks awarded is attached.

PUPIL TEACHERS' EXAMINATION, YEAR 1926.

Agriculture.

Name.	School.	Max. Marks 100
Probationers.		
Harold R. Gajadhar . .	Forestiere	57
John Alexander	Saltibus R.C. Juvenile	54
Charles Eugene	Castries R.C. Juvenile	34
Joseph Romain	Soufrière Boys' Juvenile	27
Anderson Fédée	Babonneau Comb'd School	25
Remy Fannia	Canaries Juvenile	22
Constantine Emmanuel	Choiseul Boys' Juvenile	20
First Year.		
Frederick Smith	Saltibus Juvenile	65
Felicien Fontenelle	Vieux-Fort Boys'	45
L. G. Lesmond	Dennery Boys'	34

Second Year.			
Henry Cotter	Laborie Boys' Juvenile		57
A. Faucher	Choiseul Boys' Juvenile		52
Joseph Alphonse	Canaries Juvenile		30
Martineau Nelson	Soufrière Boys' Juvenile		28
Vitalis Tobie	Dennery Boys'		26
Boniface Placide	Laborie Boys' Juvenile		15
Third Year.			
Percival Alphonse	Laborie Boys' Juvenile		65
Jn. Baptiste Frederick	Castries R.C. Juvenile		51
Romillien Jn. Baptiste	Mon Repos Juvenile		35
William Beaulieu	Soufrière Boys' Juvenile		32

R. W. NILES,
Examiner.

February 18, 1927.

LECTURES TO TEACHERS.

The Agricultural Superintendent conducted the annual lectures in Agriculture to Head Teachers and Assistant Teachers at Primary Schools, in a series of five days lectures held in August, the following subjects being taken :—

The Management of School Gardens,

The Maintenance of Soil fertility,

Some Diseases and Pests,

Sugar-cane, its cultivation and utilisation,

Botany and ecology of some common plants.

There was a good attendance both of Teachers and visitors, including a number of planters and estate managers.

LESSONS TO PUPILS OF PRIMARY SCHOOLS.

The Agricultural Superintendent was unable to visit many schools owing to pressure of work and instruction and inspection was carried out by the Assistant Agricultural Superintendent.

AGRICULTURAL WORK AND INSTRUCTION IN THE COUNTRY DISTRICTS.

An increased number of visits was made by the Agricultural Officers to estates and country districts, a special feature being the formation of branches of a Small Planters' Association in each district, great assistance was given by the attendance of His Honour the Acting Administrator at initial meetings and this did much to arouse interest and obtain cooperation.

The Association has been of practical value in the early stages of a banana industry ; this organisation should be a means of improved cooperation with the Agricultural Department for the mutual benefit of the small planters.

VISIT OF AGRICULTURAL SUPERINTENDENT TO TRINIDAD.

The Agricultural Superintendent obtained leave to visit Trinidad on November 14th, on duty for fourteen days in order to become acquainted with the Principal and Staff of the Imperial College of Tropical Agriculture and the experimental work in progress there ; the last visit of the local Agricultural Officer on duty took place in 1912 when the two Senior Officers attended an Agricultural Conference at Trinidad, since then many changes have taken place and it was desirable to obtain closer contact and discuss matters of general agricultural interest by a personal visit.

The following is a report on the visit :—

"I left by S S. "Biskra" on Sunday Nov. 14th, arriving in Trinidad on Monday morning ; accommodation having been obtained ; I interviewed the Commissioner, Dr.

Martin Leake, and the Acting Commissioner, Mr. Geoffrey Evans, with whom I discussed the position of agriculture in St. Lucia, particularly the chief industries and the banana industry, I also submitted a report on the control of banana diseases.

"Arrangements were made for the first week to visit each of the Professorial staff and discuss matters on which each specialist would advise.

"Accordingly I called on Professor Ballou, Entomologist, with whom I went into the position of insect pests and control as affecting St. Lucia; I was enabled to examine specimens and identify various pests not yet known in St. Lucia, and obtained information as to measures for combating those known to be present.

"Work on Banana weevil and borer, Fruit scarring beetle of Bananas, Froghopper and various root pests was particularly studied.

"In the Mycological laboratories I discussed the question of plant fungi with Dr. Briton-Jones, the Mycologist, work on Panama disease of bananas, section-planting of bananas to reduce risk of disease and improvement along this line was discussed, other diseases such as Wither-tip of limes, Bunchy top of bananas were gone into, and methods of quarantine considered.

"I visited Professor Hardy, the Chemist, and discussed soil reaction and recent methods of examination of plant juices, such as sugar-cane juice, lime juice, etc.

"With Professor S. Dash I inspected throughout the College experiment plots and discussed methods of rotation, intercropping, implemental tillage and so forth; the plots of introduced bananas were also examined and compared against local varieties.

"Through Professor Dash I obtained the opinion of the Mycologist and Entomologist on a disease of bananas occurring in restricted areas in St. Lucia, a specimen of which I submitted. The possibilities of export trade in various kinds of bananas and the handling conditions and temperature factors of such kinds as Short Fig, Giant Fig, Congo, etc., were discussed.

"I was also enabled to select useful plants for introduction to St. Lucia.

"Professor Dash further undertook arrangements for estate visits and so enabled me to make useful trips without loss of time.

"I inspected the Model Sugar Factory, St. Augustine, with the Acting Commissioner and Professor Scott, Sugar Technologist, improved methods of liming, clarification and filtration of juices were described.

"I visited River Estate demonstration cacao plots of the Department of Agriculture, and by the courtesy of the Director, the Hon. W. G. Freeman, I was enabled to attend an inspection by the Naparima Agricultural Society, much useful information on control of cacao pests was furnished by the Entomologist, Mr. Urich, and Mr. Stell, Mycologist to the Department, who gave every assistance.

"I also visited the Botanic Station, Port-of-Spain, St. Clair Experiment Station and the Government Stock Farm and obtained information on work at each place; I visited the Department's cane-breeding Station.

"I was enabled to visit the Usine St. Madeleine by the courtesy of Hon W. G. Freeman and Mr. W. Nowell, Assistant Director of Agriculture, who accompanied me; this Factory, equipped for extensive production, provided interesting study, more important still was the information obtained as to the effects of froghopper in cane-fields and the methods devised to combat this pest; the production of megass-fibre for paper making, and utilisation of "Adco" on factory waste products was also discussed.

"With Professor Cheeseman I inspected plant-breeding at the Imperial College, particularly the progress made in crossing and raising bananas.

"I visited two large cacao and coconut estates with the Chairman of the Local Fruit Growing Association who made the necessary arrangements and who gave much information on local management.

"I also inspected the Empire Cotton Research Station with Dr. S. C. Harland and obtained information on the methods of breeding and pure genetics in progress; Dr. Harland largely assisted in making arrangements for visits.

"Every assistance was given by the College Staff who gave considerable time in discussing relative matters and were most kind in arranging a programme."

The following plants have been introduced as a result of this visit:—

From Imperial College of Tropical Agriculture.

Sugar-cane,—four varieties,
Pine-apples,—four varieties,
Banana,—three varieties,
Green dressings,—three kinds, Java grass.

From the Department of Agriculture, Trinidad.

Ornamental plants—*Bentinckia Nicobarica Ochna Mosambicensis,*
Cannas—two vars; *Adhatoda sp., Euphorbia pulcherrima,*
Irecania sp., Odontodenia speciosa,
Portlandia grandiflora, Passiflora sp.
Economic plants—San Ramon Coffee, Pine-apples– four varieties,
Avocado pear—Four varieties,
Mango "Graham," Citrus aurantifolia, Bengal bean and *Hydnocarpus Wightiana,* the Chaulmoogra oil tree.

REPORT ON THE WORKING OF AGRICULTURAL CREDIT SOCIETIES.

The principal work in connection with Agricultural Credit Societies was the collection of loans from members, this, always an unpleasant task, was rendered more so during the year as it became necessary to compel members to repay advances.

The Trustees should give serious attention to their duties and should sue members who do not attend meetings and repay advances. This work has been left to the Secretaries, mostly non-members and the Inspector of the Societies has been forced to make house to house visits in order to see these members.

Certain Societies viz: Anse-la-Raye and Dennery have by neglect increased their debt and are accordingly being dealt with through the Courts.

It is satisfactory to note that the Good Shepherd, Vieux-Fort and Gros Islet Societies have repaid their advances and ceased to function.

The debts of the Societies at the beginning of the year amounted to £961 12 8½ of which £59 17 10 only was paid off at the end of the year.

Future work will consist of realising on the securities of the Societies.

The following Report is submitted by the Inspector, Mr. R. W. Niles:—

I have the honour to submit my eleventh report on the working of Agricultural Credit Societies of St. Lucia during the period January 1st, to December 31st, 1926.

At the beginning of the year nine Societies were in existence. Early in the year the members of the Good Shepherd Agricultural Credit Society having repaid all advances held a general meeting and dissolved the Society. Toward the end of the year Vieux-Fort and Gros Islet Societies paid off their advances and will be dissolved as soon as the accounts are audited. Six Societies still owe large amounts and are not reducing them.

On January 1st, the Societies owed the Bank £961 12 8½ during the year this amount was reduced by the small sum of £59 17 10 leaving a debt of £901 14 10½ unpaid at the close of the year.

Legal proceedings have been taken against three Societies and properties have been seized. Sales have not yet taken place.

A detailed report on the working of each Society is attached:—

Dennery.

This Society consists of 76 members and on Januray 1st owed the Bank £151 17 11½, during the year members paid only a part of their half-yearly interest, and nothing towards the reduction of their advances, consequently at the end of the year the debt increased to £154 16 6.

Micoud.

This Society consists of 56 members. At the beginning of the year they owed the Bank £124 14 2, during the year members paid their half-yearly interest and £26 11 6½ towards the reduction of their advances, leaving a balance of £98 2 7½ unpaid on 31. 12. 26.

Soufriere.

This Society consists of 69 members. On January 1st they owed the Bank £247 7 2½. During the year members paid their half-yearly interest, but only reduced the above sum by £2 18 11, leaving a debt of £244 8 3½ unpaid on 31. 12. 26.

Choiseul.

This Society consists of 34 members and on January 1st owed £115 19 6, during the year members paid their half-yearly interest and reduced their advances by £5 15 4½, leaving £110 4 1½ unpaid on 31. 12. 26.

Laborie.

This Society consists of 61 members. At the beginning of the year members owed the Bank £105 5 7½, during the year they paid their half-yearly interest and £10 18 10 towards the reduction of their advances, leaving a debt of £94 6 9½ on December 31st.

Vieux-Fort.

This Society consists of 44 members. On January 1st, members owed the Bank £12 11 0 during the first half of the year they paid up this amount with interest due and ceased transactions. The Society will be dissolved as soon as the accounts are audited.

Gros Islet.

This Society consists of 31 members. On January 1st, members owed the Bank £13 8 4½ during the year they paid off this with interest due. This Society will also be dissolved as soon as the accounts are audited.

Anse-la-Raye.

This Society consists of 40 members the majority of whom neglect to pay interest or to reduce their loans. On January 1st, members owed the Bank £190 8 9½, half yearly interest was only part paid and on December 31st, the debt had increased to £199 16 6½.

Good Shepherd.

This Society was dissolved early in the year.

General Remarks.

During the year it was impossible to get a proper meeting of any of the Societies owing to non-attendance of members to form a quorum, although many attempts were made after notification.

When a member of the local Committee leaves the Island or resigns from any cause it is almost impossible to replace him. The Trustees should make greater efforts in getting members to attend meetings or failing this should collect their loans through the Courts.

I beg to thank the various Parish Priests and the Secretaries of the Societies for the assistance they have given in my inspections of the Societies.

Appended are :—

A. Statement of Loan Account of the Societies,

B. Balance Sheet of the Micoud Society reported on by the Public Auditor, (other Societies have not yet been audited.)

APPENDIX A.

Loan Account.

Name of Society.	Membership.	Amount of Loan 31. 12. 25. £	s.	d.	Amount paid during 1926. £	s.	d.	Amount owing 31. 12. 26. £	s.	d.	Remarks.
Dennery ...	76	151	17	11½	(a) ...			154	16	6	Rate of Interest 7%
Micoud ...	56	124	14	2	26	11	6½	98	2	7½	
Soufrière ...	69	247	7	2½	2	18	11	244	8	3½	Loans payable 31.12.
Choiseul ...	34	115	19	6	5	15	4½	110	4	1½	26.
Laborie ...	61	105	5	7½	10	18	10	94	6	9½	
Vieux-Fort ...	44	12	11	10	12	11	10	(b) ...			Loans due Barclays
Gros Islet ...	31	13	8	4½	13	8	4½	(b) ...			Bank
Anse-la-Raye ...	40	190	8	9½	(a) ...			199	16	6½	
		961	13	5½	72	4	10½	901	14	10½	

(*a*) Half yearly interest not fully paid up.
(*b*) Advances and interest paid off.

APPENDIX B.

MICOUD AGRICULTURAL CREDIT SOCIETY.

Balance Sheet at 31.12 26.

	Dr. £	s.	d.	*Cr.* £	s.	d.
Loan Account	4	6	2½			
Working Account	14	3	1½			
Reserve Fund				18	10	0
Cash Account (Credit Balance) ...			8			
	£18	10	0	£18	10	0

Statement of Revenue and Expenditure.

Revenue.

	£	s.	d.
Loans repaid by Members	32	9	6
Interest paid by Members	10	17	5
	£43	6	11

Expenditure.

	£	s.	d.
Paid Barclays Bank (Loan Account)	33	3	11
,, ,, (Interest)	4	10	1
Secretary	4	10	0
Stationery		1	0
	£42	5	0

GOVERNMENT LIME JUICE FACTORY.

CROP 1926.

The Factory opened on the 4th January and continued working in charge of the Department until June 14th, when it was leased for private management, limes being then purchased from peasants on a scale approved by Government.

During the period January 4th, to June 14th, the crop dealt with consisted of 167 barrels of limes and 1,848 gallons of raw juice, which produced 254 gallons of Concentrated juice and one case of Distilled lime oil, in addition to 40 gallons of Raw juice sold locally; two casks of Concentrated juice were manufactured for planters.

A statement of revenue and expenditure is attached.

STATEMENT OF REVENUE AND EXPENDITURE.

CROP 1926.—JANUARY TO JUNE.

Expenditure.	£	s.	d.
Purchase of Produce	54	17	6
Labour, Management and putting Plant in order ...	6	16	2
Fuel and oil	15	18	10
Contingencies	4	12	8
Packages	2	8	0
Export and Sale of Produce	2	0	0
Other charges.			
To Government Officials for increased duties ...	12	10	0
Interest on Loan No. 2—1925=£748 4 0 @ 5% (5/12ths —January to May)	15	11	10
Sinking fund on Loan No. 2—1925 £1,200 @ 5% (5/12ths —January to May)	25	0	0
Total Charges	£139	15	0

Revenue.	£	s.	d.
Proceeds 1 case lime oil shipped 5. 6. 26	68	6	7
Proceeds of 1 cask Concentrated juice—12 gallons concentrated juice, 40 gallons raw juice sold locally ...	12	19	6
Proceeds of 4 casks Concentrated juice shipped 16. 7. 26	39	8	2
Oil tin sold locally		10	0
Manufacturing 2 casks Concentrated juice @ £2 15 0 ...	5	10	0
Total	£126	14	3

Work of the Factory.

The influence exerted by the Government Lime Factory on the establishment of the lime industry is seen in the growing number of plants for dealing with lime products, twenty large and small factories are now established on private estates for dealing with the estate crop and limes from small proprietors.

After fourteen years of work the Factory is thus in danger of becoming a competitor with privately owned factories, in the meantime it has stimulated the establishment of the

lime industry both with large and small planters, many of the former erected their plants from experience gained by the working of the Factory, whilst small planters and peasants were encouraged to grow and sell limes by the cooperative share basis on which this Factory was established.

In 1914, the first year of the Factory working the lime crop of the Colony was equal to 12,765 barrels of limes, in 1926 the crop was equal to 59,418 barrels.

ADMINISTRATION.

REPORT ON THE WORKING OF THE REUNION ESTATE AND LAND SETTLEMENT.

Land Settlement.—Of the forty-six lots situate in the Reunion Land Settlement thirty-three have now completed payments realising a sum of £800 7 0 since the inauguration of the scheme.

Instalments on the remaining thirteen lots were well collected and payments should be complete at an early date.

Choiseul Village Extension.—This area consists of thirty-seven lots of which five have been paid for amounting to a total of £140. In addition nine lots are now being paid by instalments; twenty-three lots remain unsold.

Revenue derived from Reunion Estate was:—

	£	s.	d.
Instalments on Land Settlement ...	25	2	8
Instalments on Village Extension ...	12	0	0
House Rents	3	13	0
Total	£40	15	8

The lots were well cropped in ground provisions, fruits and some cotton.

CORRESPONDENCE AND DISTRIBUTION OF INFORMATION ON AGRICULTURAL MATTERS.

The number of enquiries continued to increase and 1,518 letters and 137 Minute Papers were dealt with during the year; information was supplied and official returns rendered for the Blue Book, Canadian Trade Commissioner, International Institute of Agriculture, Rome; College of Tropical Agriculture, Trinidad; West India Committee Circular and U S. Weather Bureau, Porto Rico; an article was prepared for the Canadian and West Indian Year Book.

The pamphlet "Control of Panama disease" and reprints of an article on Pine-apple cultivation were distributed; "Tropical Agriculture" the journal of the Imperial College of Tropical Agriculture, was brought to the notice of planters.

Acknowledgments are gratefully made for the continued receipt of the following publications:—

Bulletin of the Imperial Institute, Kew Bulletin, Empire Cotton Growing Review, Review of Applied Mycology, Bulletin and Review of Entomology, Experiment Station Record, Journal of Agricultural Research, British Cotton Growing Association Report, Journal of Agriculture, British Guiana; Bulletins and Reports of Departments of Agriculture, Mauritius and Porto Rico; Agricultural Societies of Trinidad and Jamaica; Tropical Life, and Annual Reports of Departments of Agriculture.

AGRICULTURAL HEADQUARTERS.

The building in the Botanic Gardens has been adapted as far as possible to the requirements of Library, Office and work rooms; the vacant residence at Reunion is now being used temporarily as a Rest Room available to visitors by arrangement.

EXPENDITURE AND REVENUE.

The Vote for the Agricultural Department was kept at a minimum as follows :—

	£	s.	d.
Personal Emoluments	964	0	0
Transport and Subsistence Allowance to Agricultural Superintendent and Staff	40	0	0
Subsistence Allowance, Assistant Agricultural Superintendent	36	0	0
Forage Allowance, Agricultural Superintendent	48	0	0
,, ,, Assistant Agricultural Superintendent	48	0	0
Labour, Agricultural and Botanical Station, Reunion, and Castries Botanic Gardens	350	0	0
Seeds, Plants, Manures, &c., and plant disinfection	20	0	0
Miscellaneous Requisites	40	0	0
Printing, Binding and Purchase of Books	8	0	0
Maintenance of Transport, Animals, Carts and Pedigree Pigs	24	0	0
Minor repairs to Buildings	10	0	0
Contingencies	15	0	0
Freight and transport of plants	10	0	0
	£1,613	0	0

An additional Vote of £20 was obtained as Special Warrant for propagation of nursery stock for sale, and Special Warrant of £4 10 0 was made for increase of House Allowance for the Agricultural Superintendent.

The total actual expenditure was £1,597 15 2.

Revenue.

Revenue derived from the sale of nursery stock, produce, etc., from the Agricultural Stations was :—

	£	s.	d.
Botanic Gardens, Castries	11	6	2
Experiment Station, Reunion	22	18	5
Land Settlement, Rents, etc.	40	15	8
	£75	0	3

OFFICIAL VISITORS TO THE STATIONS.

His Excellency Sir Frederick Seton James, K.B.E., C.M.G., Governor and Commander-in-Chief, Windward Islands. His Honour the Acting Administrator, Captain O. Plunkett, and Mrs. Plunkett; Professor S. F. Ashby, Mycologist, and Professor C. E. Y. Shepherd, Economist, Imperial College of Tropical Agriculture; Mr. J. R. Bovell, I.S.O., Director of Agriculture, Barbados; Mr. F. G. Harcourt, F.R.H.S., Superintendent of Agriculture, Dominica; Revd. and Hon. H. H. Cole, Acting Inspector of Schools; F. B. Sharp, Capt., Inspector of Police.

Other Visitors to the Stations.

There was a large number of visitors to the Stations during the year.

STAFF CHANGES.

The Agricultural Superintendent was absent on vacation leave from February 20th, to March 25th, and was absent on duty leave to Trinidad from November 14th, to November 28th, 1926.

Mr. L. Agard, was employed as probationary Foreman, Botanic Gardens, Castries, from June 1st, to November 30th, 1926.

Mr. C. Wardrope commenced duties as Probationary Foreman, Botanic Gardens, Castries on December 1st, 1926.

Mr. J. Sanchez, Banana Inspector, vacated his post on June 14th, 1926, and was succeeded by Mr. B. Williams on August 1st, 1926.

METEOROLOGICAL OBSERVATIONS.

RAINFALL.—The total rainfall recorded at the Botanic Gardens, Castries, for the year 1926 was 68.12 inches, being 21.37 inches below the average for 37 years (=89.49 inches); the distribution of rainfall throughout the year was below normal in February, March, April and May when dry weather prevailed; this allowed for continuous reaping of the cane crop but restricted the planting of temporary crops.

Good rains were experienced in June, July and August followed by a moderately dry period in September and October.

TEMPERATURE.—Temperature records (Reunion Experiment Station) show a mean Noon temperature of 85.5° in the shade, the maximum temperature recorded was 94°, the minimum being 62°, giving a range of 32°.

WEATHER.—The weather generally was fair throughout the year, high day temperatures prevailed during the wet period June to September and were accompanied by frequent thunderstorms; maximum precipitation 3.65 inches was recorded at Reunion on August 18th, and at Castries 3.51 inches on June 20th.

The following Tables are appended :—

1. Observations at Reunion.
2. Rainfall Returns from 33 Stations.

A supply of rainfall recording apparatus has been provided to several new stations; the Agricultural Superintendent desires to thank recorders for the regular returns submitted.

APPENDIX I.

STATION REUNION, St. LUCIA, B.W.I.
LONGITUDE=61° 3′ 20″ W. LATITUDE=13° 46′ 50″ H = 210ft.

Months.	Air Temperature.				Absolute Max. and Min.			
	7 a.m.	12 noon	5 p.m.	Mean	Max.	Date	Min.	Date
January	73·6	83·4	77·9	78·3	88	11th	64	20th
February	73·7	84·3	79·0	79·0	88	10th	66	15th
March	74·8	86·6	80·0	80·4	91	26th	67	1st
April	77·3	87·0	82·7	82·3	93	14th	69	3rd
May	78·4	87·0	83·8	83·0	93	11th	71	3rd
June	78·3	85·0	82·7	82·0	93	8th	70	21st
July	79·0	86·2	83·3	82·8	92	20th	70	1st
August	78·9	86·5	83·5	82·9	93	2nd	72	19th
September	79·5	86·8	82·7	82·6	94	11th	72	3rd
October	79·1	85·3	80·8	81·7	93	17th	72	10th
November	77·5	84·1	79·4	80·6	93	3rd	70	11th
December	74·0	84·3	73·3	79·2	88	2nd	62	14th
Year ...	77·2	85·5	81·3	81·3	94	11th Sep.	62	14th Dec.

THER. *ht.*=3′ 0″ RAINGAUGE *hr.*=1′ 0″. REUNION STATION.

Months.	Rainfall (inches)			Weather	Wind. No. of Observations of								
	Total	Max.	Date	Days of Rain	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm
January ...	4·49	0·52	12th	29	0	0	68	15	0	0	0	0	10
February ...	2·59	0·35	22nd	22	0	0	67	6	0	0	0	0	11
March ...	1·50	0·40	8th	14	0	0	66	23	0	0	0	0	4
April ...	1·01	0·19	8th	17	0	0	73	16	0	0	0	0	1
May ...	2·06	0·44	24th	20	0	0	59	30	0	0	0	0	4
June ...	7·74	1·16	21st	21	0	0	59	24	0	0	0	0	7
July ...	7·03	1·88	22nd	21	0	0	59	20	0	0	0	0	13
August ...	8·89	3·65	18th	27	0	0	55	16	1	0	0	0	21
September ...	6·49	1·05	22nd	20	0	0	29	26	0	3	4	0	28
October ...	6·30	·93	9th	27	0	0	65	6	0	0	0	0	22
November ...	8·16	1·55	28th	22	0	0	68	1	0	0	0	0	21
December ...	2·88	1·33	7th	13	2	14	70	3	0	1	0	1	2
Year ...	59·14	3·65	18th Aug.	253	2	14	738	186	1	4	4	1	144

APPENDIX II.

RAINFALL RETURNS, 1926.

Observation Stations.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	Maximum in one day and date.		No. of days on which rain fell.
	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.		
Reduit Estate, Gros Islet	3·21	1·33	·68	·28	·91	6·30	6·13	7·76	6·27	8·95	6·94	2·69	51·45	3·32	Oct. 3rd	149
Corinth ,, Castries...	4·95	2·56	2·00	·71	1·43	7·49	8·38	8·94	9·68	15·10	6·11	3·63	70·98	5·71	,, 3rd	173
Marquis ,, ,, ...	4·65	2·77	1·69	·68	1·36	6·90	8·65	7·46	5·32	6·92	9·88	2·16	58·44	3·50	J'ly 22nd	158
Choc ,, ,, ...	3 57	2·50	1·66	1·27	1·73	7·36	8·74	9·76	6·43	10·88	7·30	3·22	64·42	3·94	Jne. 20th	195
Botanic Gardens ,, ...	5·98	2·53	1·62	1·30	1·54	9·44	9·99	10·34	4·26	7·63	9·09	4·40	68·12	3·51	,, 20th	205
Government House ,, ...	4·56	2·35	1·54	1·17	1·49	7·45	8·49	10·75	5·04	6·88	8·66	2·86	61·24	4·29	Aug. 18th	234
The Barracks, Vigie, ,, ...	4·21	2·06	1·50	1·69	1·66	8·20	8·69	9·07	5·67	7·08	8·11	3·53	61·47	3·05	,, 17th	173
* Soucis Estate ,, ...	...	...	...	1·48	2·43	9·01	11·62	11·44	5·35	7·60	8·84	2·69	60·46	3·36	,, 19th	185
* La Perle ,, Roseau ,, ...	...	2·37	2·15	1·00	·60	6·20	8·75	10·68	5·83	8·59	10·77	4·78	61·72	3·30	Oct. 3rd	117
* Mont D'Or ,, ,, ...		2·71	2·31	2·01	1·66	9·90	12·43	12·42	6·35	9·57	12 98	6·69	79·03	2·74	J'ly 22nd	175
Belair Est., ,, ,, ...	4·52	2·15	1·39	·75	·91	7·67	9·11	10·70	5·51	6·96	10·59	5·40	65·66	2·66	Nov. 10th	208
* Ravine Poisson Est., Cas.[1]	...	...	...	...	2·33	11·15	10·19	12·14	5·60	10·72	13·41	6·77	72·31	3·55	J'ly. 22nd	118
* Ravine Poisson Est., Cas.[2]	...	...	...	...	...	·95	10·26	15 30	6·06	12·03	15·52	6·45	66·57	4·00	,, 22nd	139
La Perle Est., Soufrière...	9·30	3·92	2·21	2·49	1·90	9·56	12·37	13 74	11·19	10·30	14·04	5·84	96·86	3·80	,, 22nd	211
Ruby ,, ,, ...	8·82	3·52	1·81	2·12	1·75	8.21	9·79	13·09	9·29	7·92	11·69	4·66	82·67	3·40	,, 22nd	210
La Dauphine ,, ,, ...	8·09	4·16	2·13	1 61	3·96	8·74	13·53	12·36	6·77	13·11	11·06	3·92	89·44	3·80	,, 22nd	202
Union Vale ,, ,, ...	7·04	3·35	1·15	1·63	2·67	7 40	7·51	12·03	5·82	9·40	10·62	2·86	71·48	4·70	Aug 20th	232
Agric. Experiment Station, Choiseul	4·49	2·59	1·50	1·01	2·06	7·74	7·03	8·89	6·49	6·30	8.16	2·88	59·14	3·65	,, 18th	253
Park Estate ,, ...	9·19	4·58	2·83	2·31	3·04	11·36	9·80	12·87	6·89	9·79	13·56	6·09	92·31	4·89	,, 18th	225
Woodlands Estate ,, ...	6·69	5·33	4·73	2·64	3·67	11·85	9·67	14·25	11·95	19·84	17·15	3·51	111·28	5·09	Nov. 28th	215
Londonderry ,, Laborie	6·40	3·59	2 54	1·24	2·79	8·22	7·84	9·94	6·52	8·03	12·32	6·38	75·81	3·77	,, 27th	232
Black Bay ,, ,, ...	4·49	2·10	·75	·80	1·40	5·70	6·35	8·87	4·15	7·15	9·75	3·95	55·46	3·15	J'ly 22nd	93
Retraite Est. Vieux-Fort	5·44	1·59	1·20	1·33	2·34	8·23	8·21	10·21	5·13	9·87	11·78	5·28	70·61	4·65	Nov. 27th	147
Moule-à-Chique ,,	3·61	1·24	·76	·72	·84	3·30	3·69	9·28	2·48	4·67	5·83	2·25	38·67	5·65	Aug. 18th	134
Beausejour Estate ,, ...	4·67	1 24	1·36	1·14	1·64	5·98	5·95	8·05	3·47	8·59	9·50	4·10	55·69	3·85	,, 18th	138
Pointe Sable ,, ,, ...	5·34	1·54	1·44	·94	1·29	4·94	6·18	9·56	4·03	9·13	6·90	3·88	55·17	5·10	,, 18th	122
† Troumassée ,, Micoud	4·58	·93	1·47	...	1·01	5·15	6·73	3·86	4·42	5·13	7·00	...	40·28	3 25	J'ly 23rd	54
Mamiku ,, Dennery	3·16	2·06	1·27	·98	2·32	6·15	9·24	6.82	4·39	9·88	9·22	4·36	59·85	4·36	,, 22nd	234
Errard ,, ,, ...	6·21	2·43	3·09	1·02	3·15	7·92	9·73	9·93	4·68	10·63	12·71	5·30	76·80	4·58	,, 22nd	214
* Prospect ,, ,, ...	...	2·04	3·22	1·31	3 03	9 46	10·33	9·45	6·35	11·96	16·48	5·65	79·28	3·76	,, 22nd	206
La Cayé ,, ,, ...	6·12	1·57	2·66	1·23	1·41	7·57	7·67	6·14	4·37	9·40	9·81	2·71	60·66	3·25	,, 22nd	114
Resource ,, ,, ...	4·87	1·32	1·99	1·04	1·62	7·89	7·29	8·12	2·93	9·27	9·58	4·35	60·27	3·50	,, 23rd	170
Richfond ,, ,, ...	5·09	1·47	1·57	1·27	1·28	7·80	7·85	7·38	4.31	7·89	9·85	3·05	58·81	4·10	,, 23rd	121

* New Stations † Incomplete.

Note (1) Mr. H. deMinvielle. (2) Swift Banana Company.

E. A. WALTERS,
Agricultural Superintendent.

PRICES OF NURSERY PLANTS, ETC.

The prices of plants do not include the cost of the boxes or baskets.

All prices specified are for plants of ordinary quality. The prices of plants not included in this list will be fixed by the Agricultural Superintendent.

An addition of 100% is made on the prices for all plants supplied for export from the Colony.

No plants are supplied on Public Holidays.

At least six months previous notice must be given when large quantities of such plants as Coffee, Cacao, Rubber, Nutmegs, Bananas, etc., are required as it is not feasible to keep large supplies of these on hand. At least ten months' notice is required for large supplies of plants such as Para Rubber, the seeds of which have to be specially imported.

Complaints as to the quality or quantity of plants, etc., supplied, or as to the prices charged, should be made in writing and will be referred to the Agricultural Superintendent.

PLANTS

Oranges	6d per plant
Oranges Sour	3d ,,
Mangoes Grafted	1/- ,,
Lime Plants	1/- per hundred
Coffee Plants	2/6 ,,
Cacao	2d per plant
Eucalyptus	2d ,,
Avocado Pear	3d ,,
Guava	3d ,,
Casuarinas	1d ,,
Palms (various)	6d ,,
Ornamental Plants (various)	2d to 1/- per plant
Seeds per lb. (various)	3d to 6d per lb.
Seeds Vegetable	4d to 6d per packet
Plants for wind-break, hedges etc., other than the above economics	1d to 2d per plant.

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